

# Darwin at Work: How to Explain Legal Change in Transnational and European Private Law

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## 14. Darwin at work: how to explain legal change in transnational and European private law

Jan M. Smits\*

### 1. INTRODUCTION

This contribution aims to apply some insights from evolutionary theory to transnational private law and in particular to the harmonisation of private law in the European Union.<sup>1</sup> By doing so, it hopes to provide a fresh perspective to the theoretical underpinning of the development of both transnational commercial law and European private law. For transnational commercial law, it has already been well explained that the transformation of the role of the State led to new forms of governance.<sup>2</sup> If there was previously a State monopoly on providing legal certainty and enforcement mechanisms, today the goods of legal certainty and enforcement are often provided by others rather than the State institutions, in particular in cross-border transactions. In European private law, an organic development – in which the role of the national States is also rather limited – is the most likely way to create a successful unified law.<sup>3</sup> Both developments raise many questions. This contribution only aims at providing a framework to deal with one of these questions: how to explain the evolution of law beyond the State (of which transnational commercial law and European private law are important examples)?<sup>4</sup> If legal development can no longer be explained by positivist or natural law thinking, can evolutionary theory fill the gap?

As there are many varieties of evolutionary theory, it seems first necessary to sketch the specific evolutionary framework on which this chapter is built. Section 2 therefore sets out the analytical presuppositions underlying the application of evolutionary ideas to the development of private law. This framework is a relatively simple one, building on the core of Darwin's idea of natural selection. Section 3 subsequently goes on to apply the general framework to understand legal change (looking at law as an organism), while section 4 takes the argument one step further by applying some evolutionary lessons to transnational commercial law and European private law. Section 4 raises the important

\* This paper is based on the lecture given at the conference *Law, The State, And Evolutionary Theory*, University of Bremen, 5 October 2007.

<sup>1</sup> It builds on two previous articles: Smits (2002b) and Smits (2002).

<sup>2</sup> See e.g. Calliess (2008) and Peer Zumbansen (2006).

<sup>3</sup> See further Smits (2002a).

<sup>4</sup> See now Michaels Jansen (2006).

question of what we can learn from evolutionary analysis of law, if anything. Section 5 draws some conclusions.

## 2. THE THEORETICAL MODEL: A DARWINIAN EVOLUTIONARY FRAMEWORK

Despite the many variations in evolutionary thinking,<sup>5</sup> the core of the theory of evolution as developed in Charles Darwin's *On the Origin of Species*<sup>6</sup> is clear enough. It is that change in organisms takes place through natural selection. The individual members of a species organise their lives as to produce the most surviving offspring and in doing so, they necessarily adapt themselves to changing circumstances.<sup>7</sup> The descent of one or more trees of life thus leads to a diversity of species through speciation, extinction and the evolving of new characteristics within these species. In Darwinism, this process of evolution by natural selection presupposes three requirements.<sup>8</sup> First, there must be variation in species (otherwise some species could not better survive than others); second, the variation must concern variation in fitness (understood as the ability to survive and reproduce, some species being more able to adapt themselves to changing circumstances than others); third, the characteristics constituent for the fitness of the species must be inherited, meaning they must be able to move from one generation to the next. This means that the heritable *favourable* traits become more common in future generations, while the *non-favourable* traits become *less* common, allowing adaptation of the species as such. Only with these three constituents, a 'struggle for life' in the Darwinian sense can originate.<sup>9</sup>

This idea of development being driven by natural (spontaneous) selection is an extremely successful one. Daniel C. Dennett characterizes Darwin's view as the 'single best idea anyone has ever had',<sup>10</sup> claiming that evolutionary theory offers the only explanation for structural change, regardless of the discipline involved. The idea was indeed applied to many other disciplines outside of biology, including political theory,<sup>11</sup> ethics,<sup>12</sup> economics<sup>13</sup> and psychology.<sup>14</sup> Like in case of 'real' organisms, also social systems and the human brain are then considered to be developing in a spontaneous way. Consequently, their development is made dependent on two different factors. On the one hand, there is the external environment in which the organism has to survive, while on the other hand there are the internal qualities of the organism itself. The latter decide to what extent

<sup>5</sup> The wide variety of approaches the *German Law Journal* is evidence of this. Also see Kitcher (2005).

<sup>6</sup> Darwin (1859).

<sup>7</sup> See Rodgers (1998) and Sober (1984).

<sup>8</sup> Sober (1993).

<sup>9</sup> *Id.*, 9 and Kitcher (note 5), 821.

<sup>10</sup> Dennett (1995), 21. Also see Wilson (1998), declaring biology to be the mother of all science.

<sup>11</sup> Hayek (1973–1979).

<sup>12</sup> By e.g. Wilson (1975) and Alexander (1987).

<sup>13</sup> See e.g. Hodgson (1993a) and (1993b).

<sup>14</sup> See e.g. Plotkin (1979).

adaptation to a changing environment is really possible. Put otherwise: evolution is dependent on both nature (in organisms: the genes) and nurture (the environment).

One can argue about the extent to which either nature or nurture is decisive for the development of an organism. Thus, several years ago the debate about the most important determinant of human behaviour seemed to have been won by the nurture factor. It was in line with the mainstream cultural climate of the 1960s and 1970s that human behaviour would not primarily be dependent on human genes as this would go against the idea of society being 'made' by human intervention and equal opportunities for everyone. It was more of Jean-Jacques Rousseau's idea of a human being as a *tabula rasa*: man is born noble and subsequently spoiled by its environment. Today, however, nature is recognized to be just as important as nurture in explaining human behaviour.<sup>15</sup> Thus, Steven Pinker explains how the 'blank slaters' based their idea of equal opportunities for everyone on the wrong assumption that all people have the same genes.<sup>16</sup> This is not the place to delve deeply into this debate; it suffices to say that if law is looked at as an organism being steered by spontaneous selection of rules, both the factor of nature (the intrinsic characteristic of the law) and the factor of nurture (the socio-economic and cultural environment in which the law operates) need to be taken into account.

### 3. UNDERSTANDING LEGAL CHANGE: LAW AS AN ORGANISM

If natural selection is indeed the main factor steering the development of organisms, the question is whether the development of law can also be seen as guided by this evolutionary process. On first sight, this view may seem mistaken as law is usually seen as either given by some authority (like a legislator or a court) or as derived from some transcendental nature (like in natural law thinking). But this argument is mistaken: what the evolutionary perspective has to offer is an *external* account of how law develops. It does not inform us about the contents of law, but only explains why the law develops as it does. This evolutionary perspective was already applied in the 19th century by, *inter alia*, Friedrich Von Savigny<sup>17</sup> and Henry Sumner Maine<sup>18</sup> but it gradually disappeared behind a horizon of more positivist and transcendental accounts of legal development.<sup>19</sup> However, as Section 4 demonstrates, looking at law as a spontaneous order of which the development is dependent on both external and internal factors can sometimes be surprisingly insightful.

This section looks at the theoretical hurdles to overcome when applying an evolutionary framework to legal change. The three requirements for natural selection (identified in Section 2) therefore need to be transplanted to the legal domain. Can we do so?

The first requirement for natural selection is variation in species. The equivalent of

<sup>15</sup> See further Wilson (1975).

<sup>16</sup> Pinker (2002).

<sup>17</sup> Savigny (1814), and (1840).

<sup>18</sup> Sumner Maine (1861).

<sup>19</sup> Leaving aside the relevance of their work today, Cf. Elliott (1985), 43: 'by modern standards Savigny's work seems hopelessly metaphorical and unscientific'. Also see Clark (1981).

this requirement in law is the existence of diverse *national* (and sometimes European) legal rules to solve identical problems. In private law, we have various rules on, e.g., the bindingness of an offer, on tort liability and on transfer of property. These rules mainly evolved in national (socio-economic and cultural) environments. They sometimes relate to essential differences between jurisdictions that reflect differing views of society (such as differing levels of solidarity, of duties to help others, levels of social security, etc.).

Second, these rules are also likely to vary in fitness. Many of the present day rules in the various European countries are the result of a long evolution during which these rules were adapted to the environment they had to operate in. According to evolutionary theory, other rules that once existed in these countries must have been eliminated in this process of natural selection and any change of the environment in the future would – again – lead to adaptation of the present rules. Some rules may become extinct while others become more important. Legal history shows telling examples of this process. Thus, the rule on *laesio enormis* and the *numerus clausus* of contracts in Roman law had to go because they no longer fit the economic environment after the Middle Ages. Rules on animal trials were abolished because of new societal insights. And also the rule that only men could vote for Parliament had to be replaced because of a changing societal and political environment.

The third requirement for natural selection (the characteristics constituent for the fitness of the species must be inherited) is more problematic in the context of law. This is because of the simple fact that descendants taking over the genes of their predecessors do not exist. Rules do not procreate in the literal sense of the word. But one can think of an analogy with genes. In evolutionary economics, Nelson and Winter have used *routines* as playing the same role in firms as genes do in organisms.<sup>20</sup> The routines of a firm establish a *stable identity* of the firm that endures over time and – just like genes – programme its behaviour. As long as the routine is profitable, firms stick to it. The same analogy can be used in law. Rules are not just rules: they are *learnt* by students and *applied* in practice. Normally, agents (in our case: the legal actors) will not deviate from these rules because of considerations of legal certainty and equality. In this sense, the practice of application is being transferred from one generation to another. And just like genes in biological organisms, these rules may gradually change under influence of a changing environment (society).

The possibility to apply these general requirements for evolution to the law allows us to see legal change as a process dependent on both the nature (the inherent characteristics) and the nurture (the environment) of the law. The next question is what this means exactly for the development of transnational commercial law and European private law. Can we indeed apply general evolutionary lessons to these areas?

#### 4. EVOLUTIONARY LESSONS FOR TRANSNATIONAL AND EUROPEAN PRIVATE LAW?

The present debate about the development of transnational commercial law and European private law is to a large extent determined by its *normative* character: it usually

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<sup>20</sup> Vromen (1997).

takes as a starting point that present national rules are not always suited to deal with transnational commercial relationships or with transactions on the European internal market. Subsequently, one goes on to define the desired *substantive* rules that would better reflect the needs of an international market. This is very clear in the present debate about European private law, in which the question about the *need* for a common European law seems to be less important than efforts to draft actual rules.<sup>21</sup> In this view, as in other opinions of how a more uniform European private law should be achieved, diversity of law is often looked at as a coincidence or historical accident. In this respect, these views focus on what is at the normative level a *desired* development. But evolutionary theory has the potential to inform us whether establishing uniform law is also *likely* to happen in this way. The present view falls short of how likely it is that unification efforts, both at the European and at the global level, will succeed and, if so, how this unification is likely to take place. In the following, three different evolutionary insights are tested on their usefulness for this harmonization debate.

#### 4.1 The Importance of ‘Nature’: Path Dependence and Legal Change

The first possible insight is about the importance of nature.<sup>22</sup> The development of any organism is to a large extent governed by its own characteristics and not so much by its environment. This means that organisms are shaped by transformations in the past that are now irreversible. Human beings will never be able to run the hundred metres in three seconds because their legs and lungs were formed in an environment in which it was apparently not so important to be able to run that fast in order to survive. These characteristics are now constraints upon adaptive change<sup>23</sup> or, put otherwise, the future development is affected by the *path* it has traced out in the past. In biology, it was Stephen J. Gould who pointed out that evolution often depends on ‘accidents’, leading to a so-called eccentric path.<sup>24</sup> In economics, it is well known that the most efficient organizations may not come out on top because of irreversible decisions made in the past.<sup>25</sup>

The importance of path dependence was also recognized for law.<sup>26</sup> Sometimes rules have become extinct in their past environment even though they could still serve a useful purpose today. A good example of this phenomenon is the elimination of mechanisms that decide which promises are binding and which are not. *Causa* and *laesio enormis* served this particular purpose in continental Europe before the great codifications.<sup>27</sup> However, these concepts lost their main function in the nineteenth century because of their uselessness in a system that put more emphasis on the intention to create legal relationships and on the absolute bindingness of contracts. It would have been fruitful to have these concepts available at a later stage, when contract law had to find new ways to decide which contracts were binding upon the parties and which were not. But in most

<sup>21</sup> See now the draft Common Frame of Reference: Bar *et al.* (eds) (2008).

<sup>22</sup> This section is based on my account of path dependence in Smits (note 1), 79.

<sup>23</sup> Hirshleifer (1993).

<sup>24</sup> Gould (1989).

<sup>25</sup> Hodgson, *supra* note 13, 204.

<sup>26</sup> See e.g. Roe (1996).

<sup>27</sup> On this, see Gordley (1991) and Gordley and Von Mehren (2006), 461.

European legal systems, courts were not able to refer to these concepts anymore: they now had to use other legal concepts like good faith and the reliance principle to reach desired results in concrete cases.

It seems useful to look at path dependence in somewhat more detail if we want to establish how it influences transnational private law. Mark J. Roe<sup>28</sup> makes an interesting distinction between weak and strong path dependence. Weak path dependence only explains what has survived; it does not entail that the survivor is better than another: 'a society chose between two institutions and the choice became embedded, but the chosen institution functions as well as the one discarded would have.'<sup>29</sup> A road may be built at either the left bank or the right bank of the river, but the left bank is not in itself any 'better' than the right bank.

In case of this weak-form path dependence, there are no obstacles for harmonization. The types of rules one would think of as touched by this form are those related to more technical aspects of law. Whether prescription periods or other time-related devices in law are two years, five years or ten years is usually arbitrary. On the other hand, an evolution toward some 'best' rule is not really feasible here either. Courts are usually not willing to reconsider these types of legal norms once they are put into place by the legislator. In this case, harmonization is therefore only possible through the imposition of a rule in a centralist way.

This makes it important to identify these more 'technical' rules from other types of rules. Alan Watson seems to attribute a large role to such arbitrary rules: 'The truth of the matter seems to be that many legal rules make little impact on individuals, and that very often it is important that there be a rule; but what rule actually is adopted is of restricted significance for general human happiness.'<sup>30</sup> As far as the substantive parts of contract law, tort law and the law of property are concerned, I would rather not qualify these as examples of weak-form path dependence. I do not endorse the view that it is indifferent which rule to adopt and that any evolution towards 'better' rules (i.e. better suited for their environment than others) is impossible.

This is not to say that path dependence does *not* play a role in the traditional private law disciplines. To the contrary: forms other than weak path dependence<sup>31</sup> are certainly present. If we assume that the Europeanization of private law presents a crisis in the evolutionary sense, the path already taken may thus prevent the best possible rules for the new European environment from evolving. Evolution leading to a great amount of uniformity is the least probable where it is only possible to change the present rules at the expense of high cost. This is the least the case with rules that many people rely upon; on the other hand, the amount of uniformity to be attained should theoretically be the most in the case of rules that are only of use for parties that set these rules themselves. Gambaro states the following about the law of real property:

When one considers the nature of various property rights (obligations between neighbours, riparian rights, condominium law, rights of superficies, servitudes, and the like), it becomes

<sup>28</sup> Roe, *supra* note 26, 646.

<sup>29</sup> *Id.*, 647.

<sup>30</sup> Watson (1974).

<sup>31</sup> See further Roe (note 26), 648.



rather clear that much property law is deeply rooted in locally developed legal traditions. And, for this reason it is better left to those local legal traditions which for hundreds of years have addressed these issues in the manner most adapted to the locality.<sup>32</sup>

Gambaro is certainly right, but the reason why these rules are looked at as most adapted to the 'locality', has, in my view, more to do with the investments already made in the path of property law and from which it is too costly to deviate, than with 'the nature' of property rights. To change national law in the areas mentioned by Gambaro would mean that third parties' interests have to be reconsidered on a very large scale. The reliance of the parties involved on the existence of 'absolute' rights that have effect *erga omnes* would be violated if the applicable rules on, for example, the establishment of limited real rights and the registration of these rights would be eliminated or even changed. The taking into account of so many different interests has led to delicate static systems of property law with – most of the time – a *numerus clausus* of limited real rights. Moreover, to get to know the ins and outs of property law in a specific system is far more difficult than to get to know a country's law of contract: the information costs of the former are higher.<sup>33</sup> In this sense, property law is indeed stuck in a 'local equilibrium'. In most parts of property law this does not pose a true problem: any need to have uniform law is virtually absent. It is a problem, however, where there *is* a need, namely in the field of security interests: here, the *desire* to create uniform law and the present *practice* as it has evolved in the past (adapted as it is to a national system of law) diverge.

This is all different in case of the law of contract. The parties to a contract would not be truly hampered by a change of the law because of their ability to set the rules for their relationship themselves. The law of contract's dynamic character guarantees the elimination and survival of rules that are respectively the least and the most suited for their new environment. Rubin says: 'if conditions change (...) and two individuals decide that, for their purposes, behaviour that was attractive in the past has ceased to be useful, they can voluntarily devise a new contract stipulating any behaviour that they wish'.<sup>34</sup> Evidence from both economic analysis of law and comparative law support this evolutionary thesis. Economic analysis of law shows the need for a distinction between default and mandatory rules. This type of analysis makes clear that rules should be mandatory when any other rule that the parties would adopt would be violating third parties interests. Mattei and Cafaggi rightly point out that the amount of mandatory rules should decrease in a system where alternative means of protection for third parties are available. They mention, for example, there would be less mandatory rules in contract law if the tort system protected third parties.<sup>35</sup> It is obvious that property law is much more related to these mandatory rules than contract law. The economic reason for property law having more mandatory rules runs parallel to the evolutionary idea of property law being less able to change when confronted with a changing environment.

<sup>32</sup> Gambaro (1997).

<sup>33</sup> See further, Dreher (1999), 109: 'Da Wissen und Kosten eng miteinander verbunden sind, stellt Unwissenheit zumindest vor Informationskosten und begrenzt so auch die Faktormobilität ganz entscheidend.'

<sup>34</sup> Quoted by Benson (1998).

<sup>35</sup> Mattei and Cafaggi (1998), 348.



Comparative law also provides us with evidence on the evolutionary thesis. Legal transplants in the field of contract law are far greater than in the field of property law. This may be partly due to private international law's *lex rei sitae* (accordingly there is no need to incorporate foreign property rights into one's own legal system), but it is certainly also due to the high costs of transplanting from another system in the case of property law and the much lower costs in the case of contract and tort law. In the latter, legal transplants have been vigorous; the relative uniformity already existent in the field of European contract law is undoubtedly caused by these transplants. In particular, English law was to a great extent influenced by the civil law of the nineteenth century,<sup>36</sup> as continental European law is influenced in the late twentieth century by the law of financial transactions on, for example, swaps, lease and franchising, coming from the common law world.

The general lesson is that evolution of legal norms may not under all circumstances lead to an optimal outcome. Whether a national rule will be replaced by a new European or transnational one also depends on whether lawyers and other legal actors are willing to deviate from existing practices.

#### 4.2 How Law Develops: A Race to the Bottom?

The second evolutionary insight useful to explain legal change is about the way in which evolution takes place. This is usually not through the complete extinction of a species, but through adaptation of it. Evolutionists would say the external identity of an organism remains identical while its contents changes. This phenomenon is well known in legal development as well. Legal concepts tend to change as to contents while remaining the same in terminology and outlook. Contract and property today have a completely different content compared to contract and property in Roman times or in the nineteenth century. This 'Funktionswandel' of a rule takes place more frequently than the clear-cut elimination of a rule.

Evolutionary theory also tells us that the direction in which adaptation takes place is usually toward simplicity, in particular when homogenization of the environment reduces the number of distinct niches available. The movement is toward complexity when there are only a few species that proliferate within a new environment with many unfilled niches.<sup>37</sup> The more homogeneous an environment is, the more homogeneous the organisms are. In the desert, organisms are less complex than in the rainforest. The interesting question is what this means in the context of legal harmonization. If the direction of adaptation is indeed towards simplicity in case of homogenization of the environment, this is an indication of the direction private law would take in uniform economies (such as the one of the European Union). It seems likely that the more homogeneous the economy is, the more uniform the applicable private law will be. This fits in remarkably well with the criticism usually expressed against allowing a spontaneous selection of the proper rules on the market. Critics of jurisdictional competition emphasize this may lead to a 'race to the bottom'.<sup>38</sup> If private actors are free to choose the law applicable to their

<sup>36</sup> See Reimann, ed (1993).

<sup>37</sup> Hirshleifer, *supra* note 23, 205.

<sup>38</sup> See further, Kraus (1997) and Barnard (2000).

relationships with others, it is likely they will choose for the law of the jurisdiction with the lowest standards (like in the case of American company law the state of Delaware would be such a jurisdiction). The 'home country control principle' subsequently guarantees this low standard to be exported to other jurisdictions. This race to the bottom may thus be said to arise when 'in a deregulated internal market, a state unilaterally lowers its social standards in an attempt to attract business from other states'.<sup>39</sup>

The concerns usually expressed about this 'race to the bottom' are mostly normative: the possible lowering of standards is usually seen as a negative thing without too much evidence of this actually happening in practice. Evolutionary theory approaches the problem from a different angle: it shows us to what extent a race to the bottom will indeed take place in a changing economic environment. Barnard shows there is little evidence so far of this phenomenon in Europe.<sup>40</sup> She identifies six conditions that have to be met if a race to the bottom is to emerge. Among these conditions are a wide choice of different jurisdictions (like more than 50 legal systems in the United States) and full knowledge of each jurisdiction's characteristics. These requirements are not met in Europe, where – until recently – there were only 15 jurisdictions and where it is often difficult to obtain the necessary information about the various legal systems.

However, from the evolutionary perspective a race to the bottom is likely to emerge if these two requirements are met in the future. As to the first requirement, the recent enlargement of the European Union with 12 new member-states implies that the differences between the various systems could very well increase. A migration of companies toward jurisdictions with lower standards is then likely to occur. In order to meet the condition of full knowledge of all the European jurisdictions, there is a need for more comparative law study. The only barrier for a true race to the bottom would be constituted by the minimum standards of law, set by the European Union's directives and regulations. However, the fact that these standards are a barrier to evolution can also be explained by evolutionary theory: the path that has been traced out in the past has – in Europe – been one of not giving economic considerations the upper hand. A social policy was always part of the European venture. In this sense, the investments already made in this policy would be too costly (perhaps not only in a social or cultural sense, but also in a financial sense in that it would entail large costs of changing the present legal position of workers, unemployed, and so on) to deviate from.

But not all of the present social guarantees in the European legal systems (namely those guaranteeing more than the European minimum standard) will be kept intact. Hayek is right when he stresses that legal rules may have come into being through historical accident, but that natural selection decides which rules are to survive. The natural selection process then chooses between competing groups of humans, letting survive those groups whose cultural norms and rules are more suited to efficiently coordinate social interactions.<sup>41</sup> The European venture of creating a common market then implies it is the group of those who are best able to operate on that market whose rules will eventually survive.

<sup>39</sup> Barnard (note 38) 57.

<sup>40</sup> *Id.*, 70.

<sup>41</sup> Hayek (1967); see further the critical assessment by Vanberg (1993).

### 4.3 Extinction or Living Together?

The third point is about the results of the evolutionary process. Does evolution lead to the survival of one organism only (with extinction of other organisms) or to different organisms living together at the same time? Biology clearly shows that more fit organisms compete with less fit organisms in a constant struggle for survival.<sup>42</sup> This is even the core of biodiversity. If considered from the viewpoint of efficiency or some other external goal, there would be no need for such diversity but this way of reasoning misses the point entirely. To consider biodiversity from a functional perspective would be absurd. The mere fact of some organisms being more successful than others is not relevant in this context: each organism has its proper place in the environment of which it is part. Also from the economic viewpoint, Cooter and Kornhauser have shown that evolution does not necessarily lead to only one surviving efficient rule, but always to some equilibrium of better and worse rules.<sup>43</sup>

Is this evolutionary insight also of importance to understand legal change? I think it is: it can provide a theoretical explanation and justification for legal diversity. The normative arguments in favour of legal diversity are well known.<sup>44</sup> On the one hand, there is the argument of Tiebout<sup>45</sup> that competition of legal systems leads to more preferences being satisfied. If legal actors can leave the jurisdiction they dislike (they can 'vote with their feet'), national governments are stimulated to make their jurisdiction as attractive as possible. The introduction of uniform law would reduce this exit-opportunity and lead to less preferences being satisfied. On the other hand, it is often claimed legal diversity enhances innovation of existing law: it allows jurisdictions to serve as 'experimenting laboratories'.<sup>46</sup>

These two normative arguments for legal diversity can be supplemented with the evolutionary insight that fit and less fit solutions often co-exist at the same time. This insight may not only be used to explain present-day legal diversity, but also to *justify* the existence of different rules to deal with similar problems. In the latter meaning, biodiversity sets an example for the legal domain: it warns us for attempts to eliminate legal diversity in a centralist way. Instead of a European legislator identifying one 'best rule', the selection process should be left to practice. The result of this process may be that not one uniform rule emerges in the end, but this is nothing to worry about. It is the logical result of a spontaneous legal order created by natural selection.

<sup>42</sup> Elliott, *supra* note 19, 70.

<sup>43</sup> Cooter and Kornhauser (1980).

<sup>44</sup> See further, e.g. Smits (2006).

<sup>45</sup> Tiebout (1956). Also see Ogus (1999).

<sup>46</sup> L. Brandeis, in: *New State Ice Co. v. Liebmann*, 285 U.S. 262: 'It is one of the happy incidents of the federal system that a single courageous State may, if its citizens choose, serve as a laboratory; and try novel social and economic experiments without risk to the rest of the country.'

## 5. CONCLUSIONS

The aim of this contribution was to establish whether evolutionary theory can help to explain the development of transnational commercial law and European private law. Increasing Europeanization and globalization lead away from traditional explanations for legal change founded in positivist and natural law thinking. The above shows that some evolutionary insights can indeed be applied. The necessary prerequisite for this is to consider law as an evolutionary organism and to apply the three requirements for natural selection to legal change. Once this hurdle is taken, three lessons from evolutionary theory can be applied to law.

The first lesson is about the importance of path dependence: just as organisms are shaped by now irreversible transformations in the past, the law is also affected by the path traced out in its previous development. Legal rules are therefore never completely shaped by the needs of their environment, but also dependent on their own characteristics. This works out in different ways in different areas of law. It is likely that transnational commercial law and European contract law are the least affected by the factor nature and therefore the most susceptible for change.

Second, evolutionary insights are useful to explain how legal change takes place. It is usually not through the complete extinction of a species, but through adaptation that change happens. This adaptation is usually towards more simple species if the environment becomes more homogeneous. This insight can be applied to law: legal diversity is likely to decrease in those areas where the environment becomes more uniform. There is little doubt this is the case in transnational commercial law and European private law. It remains uncertain whether this uniformity will manifest itself as a 'race to the bottom'.

The third lesson is that evolution often leaves diversity in place: several organisms exist at the same time. This insight can be used to explain why different rules exist to deal with similar problems. This is also true at the European or global level: evolutionary theory can explain why competition of legal rules is to be preferred over centralist unification of law. This does not mean that natural selection of rules will always produce optimal outcomes, but this is because evolutionary theory does not say anything about desired law: it only provides a framework for explanation.

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